

# 4-H Technology Series

## Discovering Digital Cameras

### Welcome 4-H Leaders!

Welcome to the “Discover Digital Cameras” project. There are lots of information, fun facts, and hands on activities that covers everything from basic camera functions to picture composition. This guide provides project meeting plans (**Skill Builders**) that include skills lists, background information, activity suggestions, and ways to know if members have learned the skills identified. Building on Exploring Technology on how to safely use electronic storage and the internet, members will label photos to remind them what skill builder or activity they came from. In their ongoing photography experiences, correct labeling will help to find and remember who, what, where and when.

In this project, members will examine, by **learning to do by doing**, the professional and safety issues involved in photography, basic operations common to most cameras, care and maintenance of cameras and basic elements of composing a good looking photograph. The Leader Guide is written with the expectation that the project leader(s) will have a working knowledge of digital cameras and how they work. If not, you may need to do some in-depth preparation / research on the activities, or recruit assistance for certain sections. Be sure to try out activities, demonstrations or hands on work ahead of time to ensure you have an understanding of each Skill Builder. This also allows for any adjustments should an activity not work for you or if any equipment or supplies are unavailable.

**The 3D's of Learning** - Each Skill Builder has three sections of learning called “Dream it!”, “Do it!” and “Dig it!”. Below is a description of each.

**Dream it! Plan for Success** - this gives members a chance to help plan their activities. A skills checklist, background information, important words, and activating questions are included in the Member Manual so they will be able to think about the topic and activity and decide how they will approach it. The Leader Guide contains in-depth background information on the topics, material lists, suggestions, time requirements for activities, and activating, acquiring, and applying questions to engage member's thinking through each step of the learning process.

**Do it! Hands on learning** - this is where members are engaged in the activity planned / discussed in the *Dream it!* Section. Here members are doing the activities and leaders are observing, recording, and providing feedback on how well they are doing. Allow as much individual practice as required; you are assessing the progress and understanding of individual members.

**Dig it! What did you learn?** - this simply means that members and leaders need to ‘dig into their learning’. For the learning cycle to be completed, both need to reflect on how things went and how well they did. For members, this involves self-assessment, giving feedback, creating meaning from their experiences, and thinking about what they would do differently next time. Once this is done they will be in a good position to apply what they have learned to the next experience.

The sequence of project meetings and specific skill building outcomes for members in this project are on the chart on the following page.

MASTER  
**DISCOVER**

EXPLORE

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# What Skills Will The Members Learn?

Each section or Skill Builder (or Builder) in this project has activities that will help your project group learn to do by doing while learning new skills and having fun!

## DISCOVER

To complete this project, you must:

- Complete the activities in each Builder **OR** a similar activity that focuses on the same skills, as you and your member may plan other activities.
- Plan and complete the Showcase Challenge.
- Complete the Portfolio Page.
- Participate in your club's Achievement (See the inside back cover for more information about 4-H Achievements).

	Members will be able to...	Activities	Page
Skill Builder 1	Good Habits <ul style="list-style-type: none"> <li>• Recognize hazardous situations</li> <li>• Use professional courtesies</li> <li>• Properly prepare for outings</li> </ul>	<ul style="list-style-type: none"> <li>• Safety Sensitive</li> <li>• Get Ready</li> <li>• Marty's Manners</li> <li>• Capturing Danger</li> </ul>	6 6 7 7
Skill Builder 2	The Basics <ul style="list-style-type: none"> <li>• Recognize a point-and-shoot camera from a DSLR camera</li> <li>• Name and understand the function of basic camera parts</li> <li>• Use basic camera features</li> </ul>	<ul style="list-style-type: none"> <li>• Parts and Pieces</li> <li>• Feature Functions</li> <li>• My Camera</li> </ul>	12 13 14
Skill Builder 3	How it Works and How I Work it <ul style="list-style-type: none"> <li>• Understand how cameras record images</li> <li>• Identify lighting situations</li> <li>• Use exposure settings appropriately</li> </ul>	<ul style="list-style-type: none"> <li>• Faulty Photography</li> <li>• An Eye for Photography</li> <li>• Limitless Lighting</li> </ul>	18 18 19
Skill Builder 4	Camera Survival <ul style="list-style-type: none"> <li>• Safely handle a camera in many environments</li> <li>• Clean and maintain camera</li> <li>• Identify suitable batteries and memory cards</li> </ul>	<ul style="list-style-type: none"> <li>• Camera Care</li> <li>• Work With it</li> <li>• Cleaning the Camera</li> <li>• Hectic Handling</li> </ul>	23 24 25 25
Skill Builder 5	Creative Composition <ul style="list-style-type: none"> <li>• Make use of "the rule of thirds"</li> <li>• Use different lighting effects</li> <li>• Use different perspectives</li> </ul>	<ul style="list-style-type: none"> <li>• Do You See What I See?</li> <li>• The Rule of Thirds</li> <li>• Locating Lighting</li> <li>• Hedgehog, Human, Hawk</li> </ul>	30 30 31 31
Skill Builder 6	Polishing and Preserving Pictures <ul style="list-style-type: none"> <li>• Safely store digital photos</li> <li>• Use photo-enhancing software</li> <li>• Create a digital scrapbook</li> </ul>	<ul style="list-style-type: none"> <li>• What Now?</li> <li>• Storing and Sharing</li> <li>• Digital Touch-ups</li> <li>• Scrapping it Together</li> </ul>	35 36 37 38
When members successfully complete their builders, they will showcase what they have learned.			
Showcase & Portfolio	<ul style="list-style-type: none"> <li>• Explain success in using the skills listed above</li> </ul>	<ul style="list-style-type: none"> <li>• Showcase Challenge</li> <li>• My Portfolio Page</li> </ul>	42 43

# Showcase Challenge and My Portfolio Page

At the end of the members' section are the **"Showcase Challenge"** and **"My Portfolio Page"**. The Showcase Challenge page gets members to think about their accomplishments and explain or demonstrate how they were successful. There are a number of suggestions along with planning information to help them decide how they will best "showcase" their learning to friends, family, community members and/or fellow 4-H members.



Record keeping is an important part of every 4-H project. **"My Portfolio Page"** is a graphic organizer used to keep track of members' 4-H experiences. As each member learns skills, the evidence of learning (through participation and completion of the various activities) is recorded on the page. When the Portfolio Page has been completed and confirmed by the leader, then it becomes a record of the member's completion of the project and participation in other 4-H activities beyond the project.

**4-H leader assessment** of members will happen throughout the project as you assess the progress and understanding of individual members. You need to observe the members doing the skill and record what you see and hear. Your feedback should be positive and descriptive (not just "well done"). Share that feedback with members frequently so they can put your suggestions into action. How you choose to observe and record is up to you. Some methods are to create checklists, videos and notes while encouraging discussions, peer observations and questions. Recognize that members may improve over the course of a builder and that records should be updated to reflect when they demonstrated their best learning. You are discussing how well members are meeting the skills checklists that are at the beginning of each of the project books, in each Builder and on the Portfolio Page.

Projects promote technical, communication, meeting management, and leadership skills, as well as community involvement and real-world experiences. In addition to the specific skills members are to learn in each builder, the following general learning goals for members are important: Following instructions - Working with others - Using supplies safely - Using the key words - Improving with

## 4-H Project Series Skill Development Levels

Each project topic series contains three levels of skill development: explore, discover, and master.

**Explore** - each project series has one project outlining the fundamentals. All members will be expected to complete the Explore level project before moving into the Discover level projects. It introduces the basic skills and terms needed by members for subsequent projects in that series.

**Discover** - each project series has several project options and members are encouraged to take as many as they would like. At this level, members practice topic specific techniques and gain theme related skills through specialized builders.

**Master** - multiple project options encourage members to specialize in a topic. They may branch out and take advantage of community options such as cooking for a canteen or participating in a food drive. The leader's role is to look for opportunities for their members to have more authentic experiences by: working with other mentors, partnering with outside agencies, participating in exchanges, entering competitions, etc. Projects at this level may include the "Partner-a-Project" whereby pre-approved courses will allow members to advance their skills, while applying their learning to the 4-H program.

## 4-H LEADER TIPS FOR SUCCESS!

### DISCOVER

- ◆ To complete, members **must** complete all the activities referred to on the “Project Completion Requirements” page **OR** alternate idea for an activity that would teach the same skill or an age appropriate variation. If activity substitutions are used, be sure to have the member make note in their manuals.
- ◆ Dependent on time available at each meeting, group size and abilities of group members, you may wish to break the Builders into more than one project meeting.
- ◆ The internet has lots of interesting websites and educational activities. You may choose to use a search engine to explore the options available. We do not endorse any website or the safety or functionality of any products they may sell. Information/products will be used at your own discretion.
- ◆ Safety is a number one priority. Care has been taken to create safe, age appropriate activities throughout this manual. As leaders, it is important for you to emphasize safety rules and manage or adapt activities in a manner that will safely match your members abilities. Ensure members have a good understanding of safe working and handling practices when using tools, that they use the appropriate safety equipment when necessary, and that appropriate supervision is provided. A quality experience needs to be a safe experience.
- ◆ The multiple intelligences theory teaches us that people learn in at least 8 different ways. All individuals will be stronger in some ways of “intelligences” and weaker in others. It follows that the more ways we teach, the more members we will reach. Throughout this project, you will find a mix of writing, reading, hands-on work, artwork, self-evaluation, group discussion and math calculations. Teaching projects using a broad blend will help increase the learning potential of all members.
- ◆ Projects are designed to teach many skills – such as an understanding of the science behind how machines work. However, the 4-H member is always more important than the subject matter. Stress cooperation in the activities where possible to develop teamwork and cooperation skills – valuable skills that will assist them in a number of settings. Ensure the work is completed in a manner that members feel good about themselves and their efforts. This can be done by assigning appropriate tasks or roles based on member’s individual abilities. Modelling and expecting supportive behaviour - that is, no “put-downs” – amongst members, or by other adults, also contributes to a positive experience.
- ◆ There will be opportunity for experimentation and applying skills that members have learned throughout this project. Experimenting can be frustrating, but learning through trial and error is an important life skill. Explain to members that it is alright to either go onto the next builder or do the builder again if they need the practice. Help the members work through their challenges until they are satisfied with the quality of their designs. Creating inventive 4-H members will be very rewarding.
- ◆ Celebrating success is an important but sometimes overlooked part of our lives. We encourage you to use the final section to empower the members by celebrating all they have learned in a fun manner. Anything that you do to add to the spirit of fun and the sense of accomplishment of each member will likely be remembered as the highlight of their 4-H year.



**Have fun and thanks for your belief in young people!**



# Skill Builder 1: Good Habits

## Skills Checklist

- Recognize hazardous situations
- Use professional courtesies
- Properly prepare for outings



## Background for Leaders

Taking pictures and using digital cameras may not be new activities for members or leaders, but when taking photos there are more things to consider than one might realize. Before a picture is even taken, a good photographer must assess the dangers of photographing in the environment they are in, prepare for those dangers, and be courteous to others at all times. After the photos are taken, it is important to be careful while posting your pictures online.

**Members will be asked to utilize the photos they are taking in builders one through five to complete an assignment in builder six. They may also wish to use these photos in their Project Showcase or at your club achievement day.**

**Please remind them that they should save their photos in a labeled spot on their computer. Or store printed photos in a folder or box where they will be available for the assignments.**

## Thinking Ahead

- What will you discuss with members? Gather observations and think of examples that will help support your discussion.

## Preparing for Success

- Linking back to the Skills Checklist, help members identify how they will know they have been successful in learning from this builder. Discuss what success in these activities might look like, sound like, or feel like.

## Activating Strategies

- Photographers have hazards too! To help members start thinking about camera safety, ask them to brainstorm and describe different hazards that might come up during the course of taking photos

## Important Words

Help members identify the words in the word box on the next page. Example strategies to improve members' understanding of the words include:

- Teach synonyms by providing a synonym members know.
- Teach antonyms. Opposites require members to evaluate critical attributes of words in question.
- Paraphrase definitions. Requiring members to use their own words increases connection making.
- Provide examples. The more personalized the better.
- Provide non-examples. Similar to using antonyms, providing non-examples requires students to evaluate a word's attributes. Invite students to explain why it is not an example.
- Ask for sentences that "show you know." Members construct novel sentences confirming their understanding of a new word.



Photo Shoot	A session in which a photographer photographs an individual or group.
Courtesy	Polite or considerate behaviour or actions.

## **Dream it!**

Safety-Sensitive (Approx. time: 20 min)

### **Age Considerations:**

Member manual is appropriate for members age 10 and up.

### **Equipment/ Supplies:**

Pencils/pens for members

### **Resources:**

Use the safety list developed in the Dream It! for additional ideas and safety rules.

### **Instructions:**

1. Discuss the silly situations presented in the members manual. What are the dangers of these situations? How can one be protected from or prevent these situations?
2. Which safety guidelines presented below could be applied to these situations? Encourage member contribution before suggesting guidelines from this book. There is space in the members manual for the information to be recorded.

Here are some standard suggestions for safety considerations when taking pictures. Remind members that safety is important, this is where “My Head to Clearer Thinking” comes in!

- Think and plan before you take a picture.
- Place yourself in a safe spot.
- Plan for an “escape route”, if necessary.
- Avoid startling animals or crowds of people.
- Watch where you are stepping.
- Wear clothing that will not catch on things.
- When working with less experienced photographers, show them safe ways to get better shots.
- Do not endanger yourself, your subjects or property when planning or taking pictures. This is an important responsibility of all photographers.

Get Ready (Approx. time: 15 min.)

### **Age Considerations:**

Member manual is appropriate for members age 10 and up.

### **Equipment/ Supplies:**

Pencils/pens



## Resources:

Newspapers, catalogues and magazines (National Geographic is great) can be used as optional supplementary material.

## Instructions:

1. Help members analyze the photos from this builder in their manuals, or search with them through material you may provide yourself. What would the photographer have had to prepare for before going out to take photos?
2. Ask members if they see situations where some of the safety rules they came up with may apply.
3. Record preparations and any new safety rules in the members manuals. Discuss to see if anyone can come up with things photographers should prepare for which have not been mentioned.



### Preparations

- If going out to take pictures by yourself, tell someone where you are going, just in case you get injured or lost.
- Sunscreen (wash hands before touching your camera!)
- Hat
- Layers of clothes
- Water
- Good snacks or a lunch
- A shirt with a collar to protect against the sun
- Sturdy boots and thick socks
- A cell phone for emergencies

### Marty's Manners (Approx. time: 15 min.)

The members manual has a message from Marty just before proceeding on to the Do it! Section. Marty introduces the topic of courtesy in photography. Discuss the following professional photography courtesies with members, so that they can apply them when taking pictures:

1. Always ask permission to go onto another person's property, and leave it in the same or better condition than it was found.
2. Ask permission to take pictures of people. Some individuals and groups have strict rules against having their pictures taken.
3. Do not flash a camera in someone's face or in the face of an animal.
4. If at an event where there is an "official photographer", stay out of the line of shooting.
5. Do not display pictures which make people look terrible.
6. If an area is posted "NO PHOTOS", obey the sign. Otherwise, you might lose your memory stick or camera. If you are in a military zone, you also might have some explaining to do!
7. Do not handle another person's camera equipment without their permission.
8. Never publish a person's picture without their permission.
9. Thank people who allow you to photograph them!

## Do it!

### Capturing Danger (Time: Approx. 1 hr.)

#### Age Considerations:

Member manual is appropriate for members age 10 and up.

**Equipment/ Supplies:**

Cameras, pencils/pens, tape/ glue/ stapler

**Resources:**

Ideas for common hazards can be found in magazines and newspapers, or online.

**Safety Considerations:**

Ensure that members do not leave the designated area while they take their photos. Provide supervision, as members may be photographing potentially hazardous situations.

**Instructions:**

1. Members must depict a situation that includes as many cautions, preparations and courtesies as they can think to include. They may draw or attach a photograph of this situation in their members manual.
2. Members must answer the questions in their manual associated with their picture.
3. Display the pictures and drawings for all members. Can anyone spot considerations that have not already been covered in previous discussions?

**Dig it!**

Now that members have an understanding of what they need to consider when taking photos, it is time to apply that knowledge by asking the following questions:

1. What have you learned? Have members review the skills checklist. Ask them what they need to consider before, during, and after their photo shoot.
2. How could they teach others? Have members in groups of two select a project from the “capturing danger” activity, or use an example they saw in a newspaper or magazine used in this builder. Each group will give a brief 1-3 minute presentation on the preparations, safety precautions and courtesies that the photographer would have had to consider.

**What’s next?**

Members now know an array of professional habits to remember when they take pictures, and are ready to become better acquainted with their camera. The next builder will introduce the different parts of the camera and how a digital camera works.

To prepare members for the next builder, ask them to consider how their camera records images. What does the flash do? What does the zoom feature change? How do these things all work?



# In the Member Manual

## Skill Builder 1: Good Habits

### Marty Says...



Digital cameras are relatively new on the technology scene, especially when you compare them with film cameras which have been around for more than one hundred years. Some things never change though, and professional habits and techniques from film photography often apply just as much to digital practices.



### SKILLS CHECKLIST

- Recognize hazardous situations
- Use professional courtesies
- Properly prepare for outings

### Important words

Watch for these important words throughout this builder:  
**Photo shoot, courtesy**



### Dream it!

Whether you're new to photography or have been doing it for a while already, there are some things that everybody needs reminding of. Safety and professionalism can easily be forgotten when you see an opportunity for that perfect picture, but sometimes it's this forgetfulness that can cost you the shot.

### Safety-Sensitive

Think of the situations people take pictures of, then think of the hazards. Here are some silly situations. How could a photographer deal with these hazards or situations?

- "Nice cliff. I think I'll just lean out here a bit and . . . ahhhhhh!"
- "Wow! Look at those flames! If I can just get a little closer . . ."
- "I'll just lean in a bit closer and get a picture of those whirling gears. My long hair keeps flipping in the way."
- "That new mother is blocking my view of the new calf. Guess I'll have to get in the pen with her."
- "I wonder how fast polar bears can run?"
- "What a great electrical storm! If I shelter under this tree, it will keep my camera dry while I take shots."
- "These silly yellow police tapes keep flapping in my way. I'll just step over and . . ."



### DISCOVER

### DISCOVER



### Get Ready

Look closely at the photos in this builder. Can you think of anything the photographer would have had to prepare for before setting out on their photo shoot? Make a quick list of things you might need or need to check before you set out to take photos.

### A Camera Mouse's Manners

- Marty knows that not everyone likes to have their picture taken. There are a few courtesies to keep in mind when taking pictures.
- Ask someone before you take their picture, and respect their answer. Never publish someone's picture without their permission.
- Don't display someone's picture if it makes them look terrible!
- Think how you would like to be treated.
- Get permission to go on someone else's property, and leave it in the same or better condition than you found it.
- If there is a sign saying "No Photos," obey it. Otherwise you may lose your memory stick or your entire camera. If it is a military zone, you might have some explaining to do!



### Do it!

### Capturing Danger

Find a picture and attach it to the next page, that you think would be exciting or interesting to take. You can take a few pictures with your own camera and choose one, or look through old newspapers and magazines to find something you like. If you can't find anything you like, draw your own situation!

## In the Member Manual

### DISCOVER

What are the hazards in this picture?

What preparations need to be done before setting out to take this picture?

What would a courteous photographer need to do to take this picture?

Why did you choose this picture?



### Dig It!

Now that you know how to spot potentially hazardous situations you understand some common courtesies when taking pictures, and know how to prepare before you start your photo shoot, you can practice teaching what you know. Have a short discussion with a friend and/or family member on the photo you chose above, and explain to your audience about the hazards, preparations, and necessary courtesies in the picture.

### What's next?

You know what to look out for when you're taking your pictures, but are you familiar with your camera yet? Understanding your camera inside and out will help you take even better pictures!

# Skill Builder 2: The Basics

## Skills Checklist

- Recognize a point-and-shoot camera from a DSLR camera
- Name and understand the function of basic camera parts
- Use basic camera features



DISCOVER

## Background for Leaders

There are 3 different categories that digital cameras fall into: basic “Point and Shoot”, DSLR (Digital Single Lens Reflex) and Medium Format cameras. The camera you end up buying will most likely depend on the function it will serve, and the budget you must follow. For this project, we will cover “Point and Shoot” cameras.

One of the main differences between a point and shoot camera and a DSLR digital camera is that a DSLR has a detachable lens. DSLR cameras also give you full control over manual settings such as exposure and shutter speed. Advantages of point and shoot cameras are that they are light weight and portable which make them perfect for the beginner photographer who wishes to capture everyday moments. They fit easily into backpacks, purses or even front shirt pockets! Everyone should own a good point and shoot camera, even the pros, because the worst camera to have is the one you left at home!

Most compact cameras offer a large LCD screen which helps in composing images, navigating menus, and viewing your wonderful captures. Many point and shoot cameras also have a video function which can be perfect for capturing a story that cannot be told with a still image. This feature is becoming more common with DSLR cameras.

## Important Words

Help members identify the following words using the methods discussed on page 5 of this manual.

Point and shoot	These cameras are portable and easy to use, but it can be difficult to fine-tune specific settings.
DSLR	DSLR cameras have a detachable lens that can be swapped for specialty lenses, allowing greater manual control over specific settings and effects.
LCD	Liquid Crystal Displays show the image seen by the camera, however they can differ from what your actual photograph with look like.
Lens	The lens is a glass or plastic composite object which focuses and directs light. The lens may be shaped in a way which adds effects to an image.

## Thinking Ahead

- What will you discuss with members? Gather observations and think of examples that will help support your discussion.

## Preparing for Success

- Linking back to the Skills Checklist, help members identify how they will know they have been successful in learning from this builder. Discuss what success in these activities might look like, sound like, or feel like.

## DISCOVER

### Activating Strategies

- Activate member's prior knowledge of cameras by displaying a camera and asking which parts of it they can name, and what that part does. There is space in the members manuals for members to write down what is discussed.

### Dream it!

Parts and Pieces (Approx. time: 30 minutes)

#### Age Considerations:

Member manual is appropriate for members age 10 and up.

#### Safety Considerations:

Remind members to be careful when sharing information, including photos, online.

#### Equipment/ Supplies:

Pencils/pens

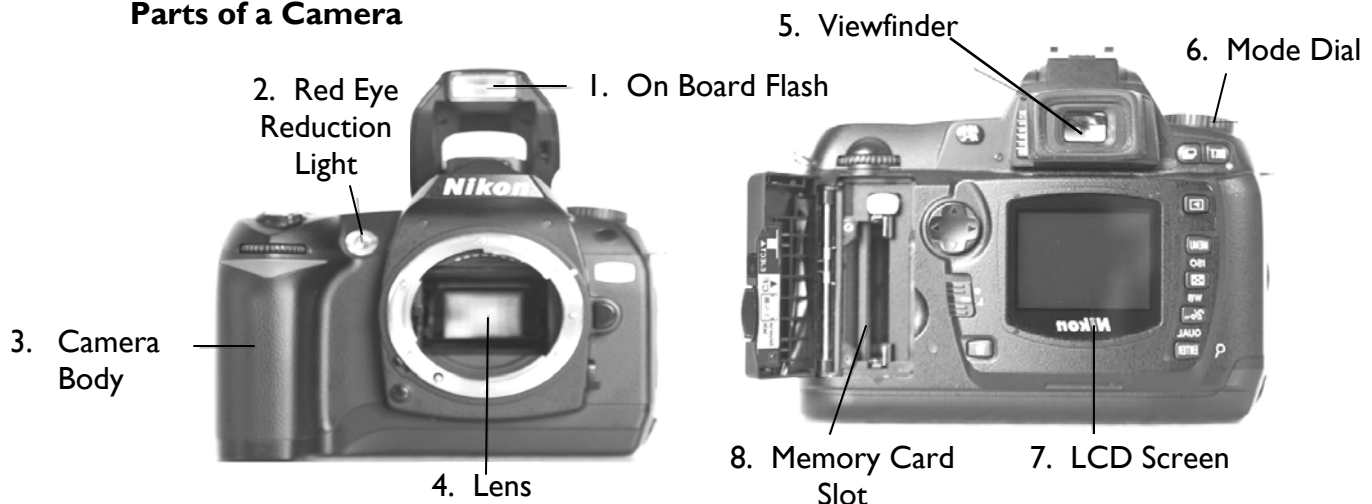
#### Resources:

This manual provides the answer key as well as information about various camera parts.

#### Instructions:

1. Allow members to examine each other's cameras and identify what parts are shared by all. What do these parts do? What features are unique to certain cameras?
2. Members will use educated guessing and their prior knowledge of cameras to label the various camera parts and assign correct descriptions. Help them think through their answers, that is, ask why is this their answer? Use hints found in descriptions and appearances (liquid crystal display = LCD, bulb = flash, red eye reducing light = red eye reduction light, main part of people is body so main part of camera = body, etc).
3. If time permits you can ask members to point to parts on their own cameras as you call out the names of parts that have been covered in this activity.

#### Parts of a Camera



## Parts of a Camera:

**Viewfinder:** This is the window that you look through to see your subject. Most point and shoot cameras available also have a “live” LCD monitor built in on the back of the camera. DSLR cameras come with an LCD screen for reviewing images.

**Lens:** Do not touch the lens! The lens focuses the light from your subject onto the camera’s digital sensor. When taking a picture, make sure that nothing is in front of the lens, like your finger, hair or camera strap. Many point and shoot cameras have a door that covers the lens when the camera is not in use to protect the lens from dust, rain and curious fingers. DSLR cameras have lenses that can be removed and switched out. This allows the photographer to use the proper lens for the job. For example, use a wide angle lens for landscape shots, a zoom lens for taking pictures of wildlife, or a macro lens to do fine detail shots.

**Memory Card Slot & USB Port:** The USB port lets you connect your camera to your computer, allowing you to update the camera’s software, and transfer images onto your computer. The memory card records the image as a JPG, TIFF or RAW file. These file types refer to the quality of the image and how much “digital information” will be stored with the image.

**Exposure Modes:** Point and shoot cameras have built in features that allow a photographer to automatically choose the correct camera settings to create images in many different lighting conditions. Examples of the most common icons and their effects will be detailed in the next builder.

**Red Eye Reduction Light:** The red eye effect is caused when a flash goes off and the pupil is not able to contract quickly enough to react to it. Light enters the open eye and reflects off of the blood within it, resulting in the red image seen by the camera. Red eye reduction lights are set off just before the primary flash so that the eye has already begun contracting before the primary flash goes off.

**Flash:** Camera flash can help to light up a dark environment or clear away shadows from portraits. Most point and shoot cameras have a flash built right in that work automatically, when the camera sensor notices that you need more light. Some cameras have a flash that you have to switch on anytime you need it. Make sure you switch it off when you do not want it. Using the on-board flash will drain your batteries at a quicker rate.

## **Do it!**

Feature Functions (Approx. time: 45 min.)

### **Age Considerations:**

Member manual is appropriate for members age 10 and up.

**Equipment/ Supplies:** Cameras, camera operator manuals as a reference

### **Resources:**

For information on flash use, try this link (or search “using camera flash”):

[http://www.hp.com/united-states/consumer/digital\\_photography/take\\_better\\_photos/tips/flash.html](http://www.hp.com/united-states/consumer/digital_photography/take_better_photos/tips/flash.html)

For information on the use of red eye reduction, try this link (or search “red eye reduction light”):

[http://www.ehow.com/video\\_2280295\\_use-red-eye-feature-digital.html](http://www.ehow.com/video_2280295_use-red-eye-feature-digital.html)



DISCOVER





## DISCOVER

### Instructions:

1. Members will be taking photos using zoom, red eye reduction, flash and exposure presets in order to better orientate themselves with these features. These points should be kept in mind:
    - The goal of the activity is to have members orientate themselves with these features. No level of mastery is expected.
    - Red eye reduction may not be available on all cameras. Consult the owner's guide if the red eye function is not readily apparent.
  - Encourage members to take multiple shots, both before and after they apply any features to their image.
  - Exposure settings will be covered later in this manual. For now members may simply experiment with this on their own. Only a couple settings need be used in this activity.
2. Once members have completed their photos, go over the photos with them and ask how noticeable the features were. Help them point out improvements. If possible, view these photos on a computer rather than the LCD screen.

My Camera (Approx. time: 45 min)

**Age Considerations:** Member manual is appropriate for members age 10 and up.

**Equipment/Supplies:** Pencils/pens, cameras

### Instructions:

1. Members will be drawing or photographing their camera, labeling its parts and attaching the result to their manual (some space provided). If this space is not sufficient, attach another page to this builder which will contain all required information.
2. Members must also answer two questions: what type of camera do they possess, and list the name and function of any parts on their camera that were not discussed in this builder.

## Dig it!

1. What have they learned? Have members go back to the skills checklist and review what they have learned. Ask them how they know that they can . . .
2. Record some of these skills under the portfolio page.
3. Ask them how they would explain to an inexperienced photographer when to use one of the basic camera features (flash, red eye reduction, exposure settings).

### What's Next?

Now that members know the names and uses of the external parts of the camera, it's time to take a look at the inside. How does a camera see? How are they able to record images? Have members experiment with different features and functions to see the different kinds of images that they can take, so that they can start thinking about what is it that affects their images most. This can give clues as to how cameras work.



# In the Member Manual

## Skill Builder 2: The Basics



### Marty Says...

You might have known how to push a shutter button on a camera for quite some time. But do you know what that actually does? You know you take pictures with a camera, but how exactly does the camera take the pictures? Understanding how photographs are created will allow you to manipulate certain elements of your camera to create better quality pictures.



### SKILLS CHECKLIST

- Recognize a point-and-shoot camera from a DSLR camera
- Name and understand the function of basic camera parts
- Use basic camera features



### Important words

Watch for these important words throughout this builder:  
**Point and shoot, DSLR, LCD, lens**



### Dream it!

Take a good look at everyone's cameras. Can you name any of their parts? How do you think cameras work? Talk with the other members in your group and see if you can figure out how a camera records images. Jot some ideas down below.

Does everyone's cameras look the same? There are different types of cameras. Two of the main types include the "point and shoot" camera and the "DSLR" (digital single lens reflex) camera. A basic difference between them is that a DSLR camera has a detachable lens, and gives more control over camera settings. In this project we will focus on point and shoot cameras.



### Marty says...

- Camera equipment is expensive!
- It's understandable that people can be protective of it. Never handle camera equipment without the owner's permission.

### Point and Shoot

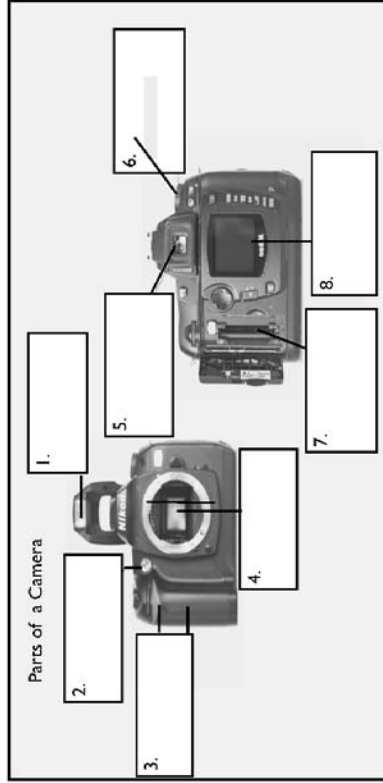


### Parts and Pieces

Try to match up the descriptions on the next page with the camera parts in the diagram. Write the box numbers in the descriptions that fit what the box points to. Then, write in the names of the parts inside the empty boxes. Discuss your answers with other members and your leader to find out what each part is called.

## DISCOVER

- Cameras have this part to show you what the unprocessed image looks like before it is digitalized.
- This is where your camera sends data to be stored onto a memory card.
- When it is too dark for good pictures, or when a bright light casts unwanted shadows, this part of the camera can provide extra lighting to balance your shot.
- This light can be used to reduce the "red eye" effect present in some pictures.
- This scrolls through exposure settings to set the camera for specific situations.
- Possibly the most important part, this collects light and focuses it onto a sensor inside the camera.
- The camera uses this liquid crystal display to show you what it sees, although the image may be slightly distorted.
- Every part of the camera is built onto this piece, which is usually designed to be easy to handle.



### Do it!

### Feature Functions

It's time to get better acquainted with your camera's basic features. Take a few pictures which display the following features in action:

- Red eye reduction (if you have it)
- Flash
- Exposure settings (choose just a few)
- Zoom



Take before and after shots to show what the image looks like without using the feature, and then how the feature changes the image. Put these photos in an album or a computer folder and clearly label what they show.

## In the Member Manual

### DISCOVER

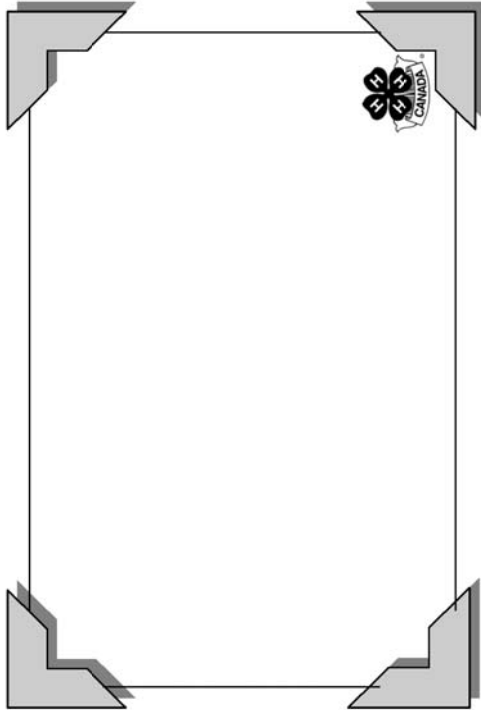
#### My camera

Draw or attach a picture of your camera in the space below. Label it's parts.

What type of camera do you have?

Does your camera have any parts that were not listed before? What are they?

### DISCOVER



### Dig it!

#### Check it...

Review the Skills Checklist on page 6. What skills have you developed? Do you need more practice?

#### Record it . . .

Discuss what you have learned with your leader and record the information on your Portfolio Page.

#### Apply it . . .

How could you teach someone when to use one of the basic features (red eye reduction, flash, different exposure settings)?

#### What's next?

Now that you understand the outside parts of your camera, it's time to look at the inside. The next builder looks at how your camera works and how you can use it better. Experiment with different camera features and functions before the next meeting. How do you think they work?

# Skill Builder 3: How it Works and How I Work it

## Skills Checklist

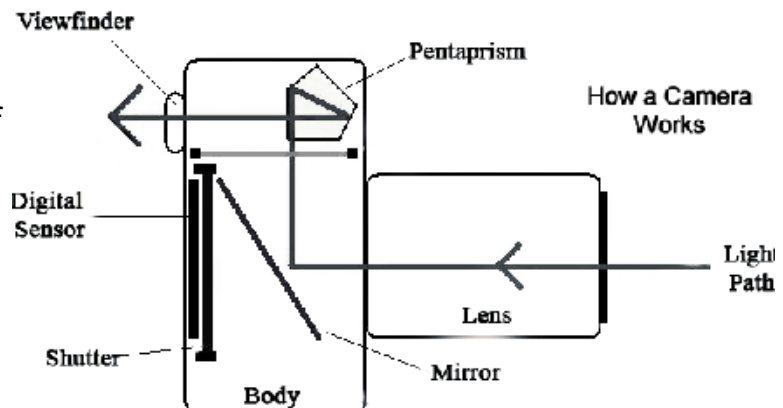
- Understand how cameras record images
- Identify lighting situations
- Use exposure settings appropriately

DISCOVER

## Background information for leaders

This builder aims to give members a better understanding of the inner workings of the camera. Just like film cameras, digital cameras have a series of lenses and mirrors that reflect light to create an image of a scene. As seen in the diagram, light travels into the camera and bounces off a mirror into the pentaprism and through the viewfinder. When you push the shutter release button, the mirror pops up.

Light goes through the lens, through the aperture, and through the open shutter to create the image. Instead of focusing this light onto a piece of film to record the image, it focuses it onto a digital sensor. A computer processor then breaks this electronic information down into digital data and saves this data onto your memory card. All the fun and interesting features of digital cameras come as a direct result of this process.



## Important Words

Help members identify the following words using the methods discussed on page 5 of this manual.

Aperture	Device which dilates and contracts, in the case of cameras this is used to control light intake
Pixel	A tiny light sensor which turns light into digital data. One million pixels equals one megapixel (MP).
Processor	A small computer which does all of the camera's "thinking," including turning information from pixels into images.
Shutter	Blocks light from pixels. Opens quickly to let light in which is then analyzed by the pixels and closes just as fast.
Exposure	The amount of light allowed to fall on light-sensitive material. Exposure settings therefore indicate the manipulation of apparatus used to control that light, or level of exposure.
Incandescent	Also known as "tungsten" lighting because these bulbs produce light by heating a tungsten (metal) filament until it glows.
Fluorescent	This lighting is produced by sending an electric current through a glass tube containing a gas.

## Thinking Ahead

- What will you discuss with members? Gather observations and think of examples that will help support your discussion.



## DISCOVER

### Preparing for Success

- Linking back to the Skills Checklist, help members identify how they will know they have been successful in learning from this builder. Discuss what success in these activities might look like, sound like, or feel like.

### Activating Strategies

- Activate member's prior knowledge of sight and image processing by asking for theories regarding how humans (and animals) can see. Draw comparisons between the human eye and the camera (such as those found in this manual).

## Dream it!

Faulty Photography (Approx. time: 20 min)

### Age Considerations:

Member manual is appropriate for members age 10 and up.

**Equipment/ Supplies:** Cameras, pencils/ pens

### Instructions:

- Members will take pictures in tungsten (or other incandescent), fluorescent, dark, and sun lighting. Make sure members know the difference between tungsten and fluorescent lighting.
- Some cameras automatically adjust settings within the guideline of a preset exposure setting. Members can identify this by the colour or quantity of light changing on their LCD screen.
- Members must use only one exposure setting for all photographs. Help them identify which setting they use so that the information can be recorded in their manual.
- Help members identify which photos were overexposed, underexposed, which ones have skewed (or "unbalanced") colours, or other problems that may arise from incorrect exposure.

An Eye for Photography (Approx. time: 10 min.)

### Age Considerations:

Member manual is appropriate for members age 10 and up.

### Safety Considerations:

It is a common courtesy not to use one's camera flash in the face of any person or creature. The same is true for flashlights. If members are shining lights into each other's eyes, they should not stare directly into the light and the light should be aimed past them, not directly at them. Also, to avoid making members anxious or nervous, avoid leaving the lights off for too long.

**Equipment/ Supplies:**

A dark room or flashlights will be needed for this activity.

### Resources:

There are no resources required for this activity beyond the members and leaders manuals.

## Instructions:

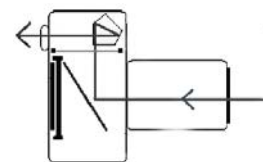
1. If possible, hold this activity in a room without windows. If not, flashlights will be required and the activity should be performed in a dimly lit room.
2. Pair off members so that each person has a set of eyes to watch. Identify the pupil as the black center of the eye, and tell members to remember what it looks like.
3. Turn off the lights for 5-10 seconds and then turn them back on. If using flashlights, have members direct their flashlights past other members' faces for 3-5 seconds.
4. Turn the lights on or the flashlights off. What do members notice about the pupil? If using room lights, the pupil will have dilated while the lights were off and should now be contracting. If using flashlights, the pupil should have contracted and will now be dilating.

**DISCOVER**

## The Aperture:

The aperture determines the amount of light that hits the sensor. The aperture is similar to the pupil in your eye in that it controls the amount of light that is let in. If the opening is smaller, less light gets in (for when there is lots of light available). If the opening is larger, then more light gets in (for low light situations).

Explain the diagram from the first page of this builder to the members (who have it in their manual). Point out that another important light controlling apparatus is the shutter, which determines how long light is permitted to reach the light sensors (similar to a hot water tap: If it is not open long enough, you only get cool or warm water; if you let it run for too long, it will get too hot. Of course, it is only open for about as long as it takes to blink your eye).



## Mega Pixels:

When light hits the digital sensor inside the camera, it is analyzed by millions of tiny light sensors called pixels. Each one million pixels is called a "mega pixel (MP)." Most digital cameras are at least 6 mega pixels or higher. The more pixels you have, the higher the resolution of your photo. Having a camera that captures more mega pixels does not improve image quality. It just means that you can print larger images without compromising quality. If you are only printing images that are 8x10 or 11x14, both a 12MP or 6MP camera would work well.

## Limitless Lighting (Approx. time: 40 min.)

### Age Considerations:

Member manual is appropriate for members age 10 and up.

### Safety Considerations:

Remind members to be careful when posting information, including pictures, online. There is more information on internet safety in the Exploring Technology member and leader manuals.

### Equipment/ Supplies:

Computer access will give members a chance to see the full result of their pictures, as LCD screens are not always accurate.

### Resources:

Have members bring their owner's manuals in case there are unfamiliar settings on their cameras.



## Instructions:

### DISCOVER

1. Have members figure out which of their setting icons represent which settings. Icons should be similar to those presented here. Any icons which are unfamiliar can be experimented with to determine what effect they have, or the owner's manual can be consulted. Icons other than those listed and in this manual should be listed and described on the space provided in the members manual.
2. Once they know which settings are which, members must now use each of at least five settings (their choice) in various lighting situations. It may be a good idea to provide a theme to photograph, such as animals, plants, equipment, or people in the area. Remind them that these pictures may be incorporated into 4-H achievement. Ideas which may help members include:
  - Compare pictures of the same setting in optimal and poor conditions
  - Experiment with zoom and flash and see how these are affected by exposure settings
  - Try creating a theme throughout all pictures, such as a recurring subject or environment
  - Take plenty of pictures! Digital = free!

### Exposure Modes:



**Automatic Mode:** Puts the camera in charge of all settings. Great for first time users!



**Landscape Mode:** Get great detail for nature shots



**Macro Mode:** Take close-ups of flowers, insects, or other small subjects



**Sports/Action Mode:** Freezes motion in sports and action shots (fast shutter speed)



**Night Mode:** Use at night or in low light conditions (slow shutter speed)



**Portrait Mode:** Shoot portraits with the background in soft focus



**Aperture Priority:** Adjust aperture to soften or sharpen the **focus of the camera** or to allow more light to enter the camera



**Shutter Priority:** Select fast shutter speeds to stop Motion, slow speeds to suggest movement



**Manual Mode:** Take full control of the shutter and aperture settings and experiment!



**Auto-Multi Program:** Automatically sets aperture size and shutter speed for a perfect exposure, but allows for more creative control.

### Dig it!

In the first Dig It! question, members simply list which settings they used. The second question asks them to explain why they chose those settings.

- Did they choose the settings beforehand and then try to find lighting which would fit the settings they chose? Or did they find images they wanted to capture and then decide on the setting?
- What was it about the lighting that influenced their choice? Did they always use settings for their intended purpose or did they experiment?

The last question asks for any special uses members found during this activity. Ideas include:

- Ways of compensating for flash when the subject is too far away
- Using low light settings in bright conditions to achieve a surreal look in a photo
- Any other ideas members may have found.

The goal of this question is to make members think about how they used their cameras. Provided that members have thought hard about this question, it is permissible for them to have no answer.

### What's next?

As members' understanding of their camera grows, it becomes more important that they can use a camera safely without supervision. The next builder focuses on protecting and caring for the camera. Have members list the protective gear they have and bring it to the next meeting.



# In the Member Manual

## Skill Builder 3: How it Works and How You Work it

Marty says...

How exactly is your camera able to see? How does it record an image? This builder will help you find the answers to these questions while at the same give you more tips for taking your photos. You'll find that once you understand how the camera works, you will know how to use it to the best of its abilities.

### SKILLS CHECKLIST

- Understand how cameras record images
- Identify lighting situations
- Use exposure settings appropriately

### Important words

Watch for these important words throughout this builder:

**Aperture, pixel, processor, shutter, exposure, tungsten, fluorescent**

### Dream it!

To understand how a camera works, you need to understand how your eyes work. A camera sees in the same basic way that we see things! As you read this page, light from a light source in the room is beaming onto the paper. The light bounces off of the paper and straight into your eyes! Ouch!

Actually as you've probably guessed, you don't feel the light entering your eyes. The only way to know that you see light is by, well, seeing! Without light you wouldn't see anything at all. Your eyes can "read" the light when it enters them, and they tell your brain what they read.

Cameras work the same way, but instead of eyes and a brain they have pixels and a processor. Pixels are millions of little light sensors which read light, and then send the information to a processor which makes sense of the information.

### Faulty Photography

#### Instructions

1. Take several pictures from areas with different situations of light. Take a few photos lit by sunlight, fluorescent light, tungsten light, and limited light or darkness. Use the same exposure settings for each photograph.
2. Write down some comments below about how the images turned out. Which exposure setting were you on? Did your camera try to adjust itself? Which picture turned out the best? Which one turned out the worst?

#### Comments on my photos:

Setting used:

Did it adjust itself?

The type of lighting in the best picture was:

The type of lighting in the worst picture was:

### DISCOVER



### DISCOVER

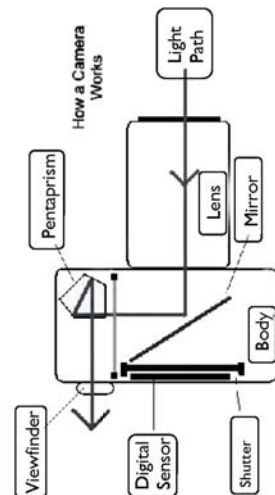
#### Message from Marty!

On-board flash systems on your camera can light up a dark image, or chase away shadows in up-close portraits. Sometimes cameras use this automatically, others get you to set it off when you want it.



#### An Eye for Photography

How does the camera adjust the amount of light it lets in? The same way your eyes do! Camera apertures work the same way as human pupils do. How do your eyes adjust to light? Write down the difference between an eye in bright light and an eye in low light. Apertures work this way too!



In addition to the aperture, the camera has another light-controlling feature. The shutter opens and shuts quickly when the shutter button is pushed, letting a controlled amount of light (determined by the aperture!) to focus through the lens and onto the digital sensor.

#### Mouse's Mention

Lenses can focus the light in such a way that the light is magnified. This translates into a "zoom" feature on your camera which can make images appear bigger than they are. Great for capturing pictures from far off or for getting details close up!



#### Do it!

#### Limitless Lighting

Cameras come equipped with technology that can automatically adjust the shutter, aperture, and other parts to meet specific light conditions. Take a look at the different settings on your exposure dial. Here are examples of the most common settings and what they are used for:

- Automatic Mode:** Puts the camera in charge of all settings. Great for first time users!
- Portrait Mode:** Shoot portraits with the background in soft focus
- Aperture Priority:** Adjust aperture to soften or sharpen the focus of the camera or to allow more light to enter the camera
- Shutter Priority:** Select fast shutter speeds to stop motion, slow speeds to suggest movement
- Manual Mode:** Take full control of the shutter and aperture settings and experiment!
- Auto-Multi Program:** Automatically sets aperture size and shutter speed for a perfect exposure, but allows for more creative control.
- Automatic Mode:** Puts the camera in charge of all settings. Great for first time users!
- Landscape Mode:** Get great detail for nature shots
- Macro Mode:** Take close-ups of flowers, insects, or other small subjects
- Sports/Action Mode:** Freezes motion in sports and action shots (fast shutter speed)
- Night Mode:** Use at night or in low light conditions (slow shutter speed)

# In the Member Manual

## DISCOVER

Does your camera have settings that are not listed in this builder? Draw their icon in the spaces below, and give a brief description of what they are used for (you can learn this from looking at your camera or by reading your owner's manual).


## DISCOVER

Get familiar with your settings by taking pictures using at least five of the preset exposures.

### Hints:

- Take more than one picture for each setting. Digital = free! Take as many pictures as you like and choose some as your favourites.
- Try taking the same picture under different lighting conditions or with different exposure settings.
- Experiment using flash and zoom to see what you like. Try taking photos multiple times with and without zoom or flash, so that you can really see what a difference they make.

## Dig it!

1. Which exposure settings did you use?

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

2. How did you decide which settings to use?

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3. Did you find special ways of using any of the settings or features such as zoom and flash? List at least one use that you think will be particularly handy in your future photos, and why it's useful.

## What's next?

Now that you have a good understanding of how to use the technical parts of your camera, the next builder will show you ways of protecting and handling your camera. These techniques will prepare you for photo-shoots in some unusual situations.

# Skill Builder 4: Camera Survival

## Skills Checklist

- Safely handle a camera in many environments
- Clean and maintain camera
- Identify suitable batteries and memory cards



## Background information for leaders

This builder looks at ways of maintaining and prolonging the life of a camera. Regular cleaning and repair are discussed, but storing and protecting a camera properly can reduce the amount of time that is spent wiping off a lens or sending broken devices for repair. Some handling technique is also covered in order to include handling tips that may help to protect the camera.

## Important Words

Help members identify the following words using the methods discussed on page 5 of this manual.

Secure data card	Small, multi-purpose memory cards.
Compact flash card	Larger memory cards with built in controller chip for faster transfer rates.
Corrosion	Batteries wear out over time, producing a white residue which can block electric current.

## Thinking Ahead

What will you discuss with members? Gather observations and think of examples that will help support your discussion.

## Preparing for Success

Linking back to the Skills Checklist, help members identify how they will know they have been successful in learning from this builder. Discuss what success in these activities might look like, sound like, or feel like.

## Activating Strategies

To help members start thinking about camera care, ask them about other items they have had to help maintain. Vehicles, heavy equipment, TVs, computers, and other expensive items all require regular cleaning or maintenance. Cameras, which can cost hundreds or thousands of dollars, are just as deserving of this extra attention as any item previously mentioned.

## Dream it!

Camera Care (Approx. time: 20 min.)

### Age Considerations:

Member manual is appropriate for members age 10 and up.

### Equipment/ Supplies:

A computer with internet access is needed if the optional hotlink is to be used.

## DISCOVER

### Resources:

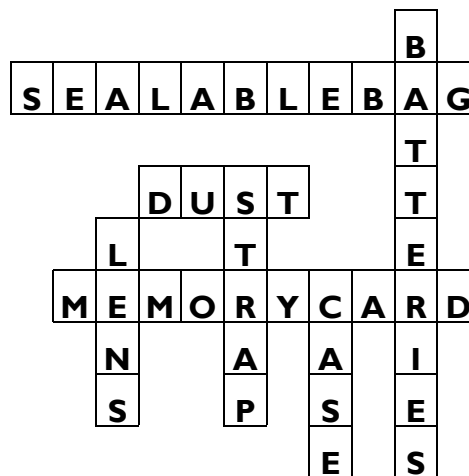
Members may benefit from watching a camera protection video at:

[www.youtube.com/watch?v=oomHLUIdwDQ](http://www.youtube.com/watch?v=oomHLUIdwDQ)

If this link fails to work, search “camera care tips,” “protecting camera,” or similar key words to find videos similar to this one.

### Instructions:

1. Allow members a chance to read over all of the hints. Ask them to fill in ones which they already know.
2. Members may elect to watch the camera care video for additional information which can help them answer the crossword.
3. When members have answered as many questions as they can, feel free to move on in this builder. Members can fill in their blanks with answers as they present themselves within the text of this builder.



## Do it!

Work With It (Approx. time: 20 min.)

### Age Considerations:

Member manual is appropriate for members age 10 and up.

### Safety Considerations:

For the safety of the camera, remind members that the contacts within the batteries are delicate, and that the memory cards are also fairly fragile. Ensure that their cameras are off before they remove these parts, or serious damage to the equipment may result.

**Equipment/ Supplies:** Members will require their cameras, batteries and memory cards. Also have a clean cloth and pencil eraser on hand.

### Resources:

Try this link for a funny video about batteries and battery life:

[www.youtube.com/watch?v=qU-M6Rx6FN0](http://www.youtube.com/watch?v=qU-M6Rx6FN0) If this link fails, try searching “batteries informative” to find related sites.

### Instructions:

1. Have members turn off their cameras.
2. Instruct members to remove their batteries, and ask what kind of batteries their cameras use.
3. They must now inspect and clean the batteries and battery compartment. Rub the contacts of the batteries and camera with a clean cloth, and rub corrosion out with the pencil eraser.
4. Discard any corroded batteries.
5. Replace batteries into camera and close compartment.
6. Remove memory card. Members must determine the type and size of memory card which was in their camera, as well as any other memory cards they may have.
7. Replace memory cards into cameras.

### **Batteries:**

Cameras may use AA batteries or special rechargeable batteries that can only be used for that type of camera. All batteries will drain faster if the LCD display and on-board flash are used, but choosing NiHM or lithium battery over an alkaline battery will give a much longer shooting time. If batteries are frequently used up quickly, invest in rechargeable ones. Make sure to carry spare batteries when going on a long outing. If the camera will not be used for a while, take the batteries out. This will prevent damage to the camera if any batteries leak.



### **Memory:**

SD (Secure Data) or (CF) Compact Flash cards are the most common of memory cards. Secure data cards are some of the smallest cards available, and are used in point and shoot and DSLR cameras as well as cell phones, video game systems, MP3 players, and PDA's. Mini SD cards are also available. Compact flash cards are mostly used in DSLR cameras and have the benefit of a built in controller chip, allowing faster transfer rates. Both types of memory cards are available in sizes from 512 MB to over 32 GB. Always have more memory than you need. For an amateur photographer 3-10 GB should cover all of your needs. If you need a 16 or 32 GB card, get a few 4 or 8 GB cards instead. That way if a card is lost or it becomes corrupted, you don't lose all of your photos. Label memory cards with your address, phone number and "reward" in case you lose one!

### **Cleaning the Camera** (Approx. time: 15 min)

#### **Age Considerations:**

Member manual is appropriate for members age 10 and up.

#### **Safety Considerations:**

Members should be reminded that their cameras may cost several hundred dollars, and care must be taken when opening or cleaning the lens of their camera.

#### **Equipment/ Supplies:**

Clean cloth, lens pen/ can of compressed air, lens cleaner, lens paper

#### **Resources:**

Owner's manuals may have additional cleaning information.

#### **Instructions:**

1. Digital cameras require periodic cleaning to keep the camera operational. Most point and shoot cameras are sealed to keep out dust and other things that may damage the camera, and so have very little to clean. Use a lint free cloth to clean the exterior of the camera.
2. To clean the lens, use a lens pen or a can of compressed air.
3. For fingerprints, use lens cleaner and lens paper and wipe gently as to not damage the lens.

Most camera manufacturers will clean and service your camera for you. It is a good idea to have this done every couple of years to make sure the camera is in top working condition.

DSLR cameras have more parts and can be difficult to clean. Check a user's manual for directions.

### **Hectic Handling** (Approx. time: 30 min)

#### **Age Considerations:**

Member manual is appropriate for members age 10 and up.





## DISCOVER

### Safety Considerations:

Supervision is necessary to ensure that members provide for both their own safety and that of their cameras.

### Equipment/ Supplies:

Plastic sandwich bags for each member

### Instructions:

1. Members will be taking pictures while wearing their wrist or neck strap, while photographing moving objects, and while covering their camera with a plastic bag. Help them cut or poke holes in the sandwich bags for their lenses, and make sure they can adjust their wrist or neck straps.
2. To encourage members to think deeper about their photographs, have members develop a theme or recurring subject in their photos, such as insects, animals, vehicles, colours, etc.
3. Have members share their photos and describe the techniques they used.

### Protecting the Camera:

Start a discussion about ways to protect cameras. Below is a list of preventative measures photographers can take to protect their equipment.

- Avoid lending cameras to others.
- Carry your camera in a camera case or bag. Always use your camera strap.
- Label it with your name and phone number in case it goes missing.
- Keep it from extreme temperatures (not in the glove box or trunk).
- Do not open your camera to switch memory cards or change lenses in dusty conditions.
- If in a dusty environment, put the camera in a plastic sandwich bag.
- When passing a camera to someone, use two hands. Be sure the other person has a good grip!
- Do not touch the lens for any reason, ever!
- Write down the details about your camera (make, model and serial number). Have someone take a picture of it for you to store somewhere safe in case you lose it.

## Dig it!

Members have learned elements of camera maintenance, acquainted themselves with the particulars of photography's consumable equipment and found ways to protect their camera. Now they must reflect on what they have learned to see what has stuck with them, and what needs to be reviewed:

1. What have they learned? Have members go back to the skills checklist and review what they have learned. Ask them how they know that they can show they know these things.
2. Record some of these skills under the portfolio page.
3. Ask which batteries and memory cards would best suit their purposes and why. What advice would they give to beginning photographers about choosing batteries and memory cards?

### What's next?

Members are now well acquainted with the technical side of their camera, and can now focus on incorporating more creativity into their technique. The next builder talks about photo composition. What makes a good photo? What is it about an interesting photo that makes it interesting?



# In the Member Manual

## Skill Builder 4: Camera Survival

DISCOVER

**Marty says...**

The job that digital cameras do requires that they be clean and in good repair to work properly. This builder will show you how to care for and protect your camera, so that you can go out and use it in many different environments and situations without risking the well-being of your valuable equipment.

**SKILLS CHECKLIST**

- Safely handle a camera in many environments
- Clean and maintain camera
- Identify suitable batteries and memory cards

**Important words**

Watch for these important words throughout this builder:

**Secure data card, compact flash card, corrosion**

**Dream it!**

Your camera is a valuable and delicate piece of technology, but with proper care and maintenance you'd be surprised just how long it can last!

**Camera Care**

Complete the following crossword puzzle to find out some common issues you'll encounter, and hopefully prevent, with your camera.

**Across**

2 Put your camera in one of these if you must take photos in a rainy or dusty environment.

3 These tiny particles can ruin your camera if they get inside of it.

6 This can be lost or corrupted, erasing all of your pictures.

**Down**

1 These can corrode inside your camera, leaving residue.

4 Wearing this at all times can prevent you from dropping your camera.

5 If this gets dirty, it can ruin any pictures you take.

7 Using this will protect your camera when it's not in use.

## Do it!

### Work With It

This activity will introduce you to your camera's smaller parts, which are susceptible to wear and tear.

1. A) Make sure your camera is off, then remove the batteries. What kind of batteries does your camera use? Common examples include AA, AAA or a special battery type used only by your camera.

B) Inspect the batteries and battery compartment for signs of corrosion. Rub the contacts on the batteries and camera with a clean cloth. If you see any marks on the contact points, use a pencil eraser to rub them off. Brush out any dust, and discard any corroded batteries.

**Marty's Battery Banter**

- When buying new batteries, try to buy a NiMH or lithium battery over an alkaline battery. These will give you a much longer shooting time.

**Mouse Memory Tip**

- If you need lots of storage space, get a few small cards instead of one big one. If you lose a card or it becomes corrupted, you won't lose all of your photos.

2. A) While your camera is off, remove your memory card from the camera. What kind of card does your camera use? There are two kinds of storage cards:

**Secure Data Cards** are some of the smallest cards available, and are used in both point and shoot and DSLR cameras. They can also be used as memory for cell phones, video game systems, MP3 players, and PDA's. Mini SD cards are also available.



**Compact Flash Cards** are mostly used in DSLR cameras and have the benefit of a built in controller chip, allowing for faster transfer rates.

B) Here is a general guide to how many images will fit on each size of memory card, based on 6-10 mega pixel cameras. How much storage does your card have? What about other cards you may own?

	Memory Card			
Camera:	1 GB	4 GB	16 GB	32 GB
6 MP	300	1,200	4,800	9,600
8 MP	230	920	3,680	7,360
10 MP	165	660	2,640	5,280

2nd storage card: \_\_\_\_\_

3rd storage card: \_\_\_\_\_

# In the Member Manual

## DISCOVER

### Cleaning the Camera

It is always a good idea to keep the exterior of the camera clean using a lint free cloth. To clean the lens, use a lens pen or a can of compressed air. For fingerprints, use lens cleaner and lens paper and wipe gently so as to not damage the lens. Digital single lens reflex (DSLR) cameras have more parts and are more complicated to clean. Check your user's manual for directions. Practice cleaning your camera.

## DISCOVER

### Hetic Handling

Taking your camera out for photo-shoots can present unforeseen risks for your camera. Luckily, there are a few things you can do to protect it.

Try taking pictures in the following situations to get used to certain methods of protecting your camera.

- Always use a wrist or neck strap with your camera. Strap your camera on, and take pictures in any position except standing up. Some positions might be a little unsteady, but your strap should help prevent you from dropping your camera.
- Hold your camera with two hands. This helps steady it and makes it harder to accidentally drop your camera. To further steady your camera, tuck your arms in against your chest or sides. Try taking pictures of moving objects or animals while doing this.
- Rain and dust are both terrible for your camera. If you are taking pictures on a dusty or rainy day, place your camera inside a sandwich bag and cut a hole just big enough for the lens to poke through. Practice taking pictures with a bag on your camera.



### **Store it safely!**

- Cameras are vulnerable even when not in use. Store your camera in its case whenever you are not taking pictures. When travelling with your camera, make sure it is secure. Extreme temperatures can damage your camera, so don't leave it where it can get very hot or cold.

### **Dig it!**

#### **Check it...**

Review the Skills Checklist on page 12. What skills have you developed? Do you need more practice?

#### **Record it...**

Discuss what you have learned with your leader and record the information on your Portfolio Page.

#### **Apply it...**

What advice would you give to someone who was buying memory cards and batteries for their camera?

#### **What's next?**

After finishing this builder, you should be better prepared for getting more creative with your photography. The next builder will go over basic elements of what makes an appealing picture. Take a look at pictures you're drawn to. What is it that you like about them?

# Skill Builder 5: Creative Composition

## Skills Checklist

- Make use of “the rule of thirds”
- Use different lighting effects
- Use different perspectives



DISCOVER

## Background information for leaders

This builder will look briefly at photo composition practices. The overall objective in this builder is to get members to think about their photos before they take them, and to use knowledge of their equipment together with an artist’s eye to create great pictures.

The three components which are introduced in this builder are lighting, composition and perspective. In this manual, only the basics of each concept will be discussed.

## Important Words

Help members identify the following words using the methods discussed on page 5 of this manual.

Viewpoint	The location or perspective from which the subject is viewed.
Subject	The person, creature or object which is the focus of the image.
Composition	The organization of the many elements that make up a photograph.

## Thinking Ahead

What will you discuss with members? Gather observations and think of examples that will help support your discussion.

## Preparing for Success

Linking back to the Skills Checklist, help members identify how they will know they have been successful in learning from this builder. Discuss what success in these activities might look like, sound like, or feel like.

## Activating Strategies

To help members start thinking about composition, prepare some pictures which display some of the compositional techniques presented in this builder. Ask members what their eyes are drawn to in each picture, and why they think that is.

## Resources

[www.photoinf.com](http://www.photoinf.com) - contains lots of great photography advice. “General Articles” is a great place to find composition tips. Searching “composition reginald green” will produce a quirky video with composition advice.

## Dream it!

### DISCOVER

Do You See What I See? (Approx. time: 20 min.)

#### Age Considerations:

Member manual is appropriate for members age 10 and up.

**Equipment/ Supplies:** Pens/ Pencils

**Resources:** There are no necessary resources beyond the leaders guide and builder manuals.

#### Instructions:

Members have four pictures in their manuals with four prompts to get them thinking. After analyzing the pictures, have members answer:

- Which picture was taken from the best angle? What makes it the best angle?
- Which picture used the best subject? Why is it the best subject?
- Which picture used the best lighting? How did the lighting improve the picture?
- Which picture is the best overall? Why is that?

There are no right or wrong answers to these questions. The point is for members to realize the similarities and differences between peoples' opinions of what is appealing in a photo.

The Rule of Thirds (Approx. time: 10 min.)

#### Age Considerations:

Member manual is appropriate for members age 10 and up.

**Equipment/ Supplies:**

Have example photos on hand. Photos which adequately demonstrate the Rule of Thirds should be used, as well as pictures that are either unappealing or break the rule while remaining appealing.

#### Resources:

Photos from previous builders and activities may be used, as well as pictures from the internet, newspapers, magazines, catalogues, essentially anywhere you can find photos.

#### Instructions:

- Using the photographs you have gathered, identify examples of the rule of thirds to members.
- Show members photos which do not use the rule of thirds. These may seem unbalanced or flat.
- Display members which successfully break the rule, often to create symmetry or other effects.

The Rule of Thirds:

Imagine that the frame has lines which form a tic-tac-toe board, dividing the frame into thirds from top to bottom and from left to right. There will be four spots on the frame where the lines intersect, these are the "sweet spots". When the focal point is placed on or near one of these spots the photo will have more impact and be more visually appealing to the eye. Once it is learned, practiced, and understood, the rule of thirds should be broken and experimented with!

## Locating Lighting (Approx. time: 30 min.)

### **Age Considerations:**

Member manual is appropriate for members age 10 and up.



DISCOVER

### **Equipment/ Supplies:** Cameras

**Resources:** There are no resources required beyond the members manual and leaders guide.

### **Instructions:**

- Members will be taking pictures of subjects in four types of directional lighting: front lighting, side lighting, back lighting and top lighting.
- Have members use only one or two subjects so that they can compare the effects that different lightings have on the subject's image.

#### **Front Lighting:**

Beginning photographers rely on front lighting (light falling in front of the subject). This is relatively safe and easy to work with. However, it is not very exciting, and often fails to show the texture of the subject. Sometimes pictures taken with front lighting look “flat”. Frontal flash lighting also causes “red eye” when light is reflected off the retinas of the subjects. Reduce this problem by moving, asking the people to avoid looking directly at the camera, or by using the red eye reduction feature (if your camera has this capability).

#### **Side Lighting:**

Side lighting helps emphasize texture and shape because it produces good shadows. The best time of day for natural side lighting is early morning or late in the day. If you examine professional photographs, you will notice by the shadows that many of them were taken using side lighting. Side lighting is not recommended for portraits because it rarely enhances skin texture and is not very flattering. Use a combination of frontal and side lighting for portraits.

#### **Back Lighting:**

Back lighting is challenging but can contribute to great photographs, if it is managed properly! It produces a ring of light around the subject and casts shadows on the subject. To get the correct exposure with back lighting, use a fill flash to add in some light to the front, change angles to reduce the back light or reflect light onto the front of the subject with a reflector, mirror or piece of white card stock.

#### **Top and Bottom Lighting:**

We are used to light coming from above, so some lighting from slightly above looks normal in pictures. Light from directly above a person produces unattractive shadows on the face (black hollows under the eyes and nose). Sometimes, lighting comes from below the subject, such as at campfires. This kind of lighting will produce dark shadows in the eyes and cast some strange shadows on the rest of the face. This is also known as “horror lighting”. Use this type of lighting if that is the effect that you want to go for! If light would not naturally come from below the subject, avoid lighting a shot this way.

## Hedgehog, Human, Hawk (Approx. time: 30 min.)

### **Age Considerations:**

Member manual is appropriate for members age 10 and up.



## Equipment/ Supplies: Cameras

**Resources:** There are no resources required beyond the members manual and leaders guide.

### DISCOVER

#### Instructions:

- Members will photograph subjects from the view of a hedgehog (roughly ground level), a hawk (from above), and human (eye level, standing, sitting or crouching is up to the member's interpretation).
- Ask members to think about how they can use different viewpoints to make subjects look powerful, weak, tall, short, flat, menacing, or any other suggestions you might come up with.

**Viewpoint** - Great photographers have the ability to look at what we see everyday and turn it in to something completely different - sometimes by using a different angle or perspective. Remember that we all see differently! Looking at subjects from a different angle, distance or in different light can reveal a strikingly different image than was found at first glance.

## Dig it!

After completing the activities in this builder, it is time for members to reflect on what they have learned by answering the following questions:

1. Take a look at your pictures from the Hedgehog, Human, Hawk activity. Discuss the following questions: How does the hedgehog's viewpoint affect the picture? How does the hawk's viewpoint change the way things appear? How does the angle and height affect what your eye is first drawn to?

*Example answers:*

Hedgehog: May give a subject a looming, powerful, or large presence.

Hawk: Subjects may appear small, flat, or vulnerable.

2. What effects did lighting play in your photos? Examine all of the pictures you took in this activity. Which direction of lighting did you use most in your Hedgehog, Human, Hawk activity? Why do you think this is?

*Example answers:*

Back lighting produces silhouettes, an interesting effect but one which produces little detail.

Top lighting produces unflattering shadows.

Side lighting produces long shadows and gives great detail to textures.

Front lighting reduces texture and can make a subject appear flat.

3. The composition basics that were introduced in this builder are present in virtually all photos, regardless of whether or not the photographer chose to manipulate them. Can you think of other art or media forms which may have rules of composition?

*Example answers:*

Painting, advertising, page layouts (newspapers, books), images on clothing, etc.

## What's next?

Now that members have a good handle on how to create photos, the last builder will look at ways to improve upon and display photos that have been taken. To get members thinking about the next builder, ask them to bring all of their photos to the next meeting. Which photos are their favourites? Which ones would they like to safely preserve in the next builder?



# In the Member Manual

## Skill Builder 5: Creative Composition

Marty says...

Deciding how to put together your photo is called "composition." When a professional photographer composes their pictures, they ask themselves questions like: "Where is the light coming from? What will be the subject of my image? What is the best angle to take this picture from? This builder will help you ask yourself these same questions and add some creativity to your compositions."



### SKILLS CHECKLIST

- Make use of "the rule of thirds"
- Use different lighting effects
- Use different perspectives



### Important words

Watch for these important words throughout this builder:

**Viewpoint, subject, composition**



**Marty's Camera Jargon**

The "subject" of your picture is what you are actually taking a photo of. Usually, you want to compose your picture in such a way that everything in your image compliments the subject somehow.



## Dream It!

Do You See What I See?

1. Which photo has the best angle?
2. Which has the best subject?
3. Which uses the best lighting?

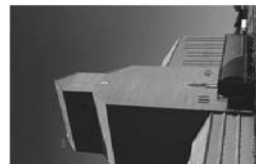
In the space provided below, answer these questions using these four pictures and explain why you chose your answers:



A



B



C



D

Which photo did you like the best? Compare your ideas with other members. Do they share your thoughts? Or were their answers very different from yours? What makes a good photograph is a matter of personal taste! Everyone likes different photos for different reasons. Here is a look at some of those reasons.

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## Do It!

### The Rule of Thirds

#### DISCOVER



One of the most valuable rules to learn is the "Rule of Thirds". Placing your subject using this rule will help draw interest to your subject and make the picture more appealing overall.

What is the rule of thirds? Imagine four lines placed evenly across your image to create three columns and three rows, like a tic-tac-toe board. You will notice that the lines intersect in four spots. These are the "sweet spots," and placing the subject of your photograph close to one of these spots can drastically improve the visual appeal of your image.

While you complete the next two activities, practice and experiment with the rule of thirds in your photos.

### Locating Lighting

As you already know, light plays a very important role in photography. Knowing the different effects which light can have on an image is crucial to taking good photographs.

The direction that light comes from determines what sorts of shadows will be cast in your picture, which can greatly alter the mood or feeling of your image. The most common examples of directional lighting are:

- Front lighting - light comes from directly in front of the subject
- Side lighting - light comes from either the left or right side of the subject
- Back lighting - light source is directly behind the subject
- Top lighting - light source is directly above the subject

Choose a couple of people or objects to use as subjects, and portray each subject in at least one photograph for each example of directional lighting.

Front Lighting



Side Lighting



Back Lighting



Top Lighting



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# In the Member Manual

## DISCOVER

### Hedgehog, Human, Hawk

In addition to where you place your subject in the picture, the angle at which you view your subject is also important. Consider different points of view when you compose your shots.



## DISCOVER

Select a couple of subjects and photograph them from three different viewpoints. Shoot from the viewpoint of a hedgehog, a human and a hawk, and compare the results of the different perspectives. Try experimenting with different lighting, too!

- Want to learn more about composition? Try searching "camera composition reginald green" for a quirky informational video. Or, check out [www.photoinf.com/General](http://www.photoinf.com/General) for lots of composition information.



### Dig it!

- Take a look at your pictures from the Hedgehog, Human, Hawk activity. Discuss the following questions: How does the hedgehog's viewpoint affect the picture? How does the hawk's viewpoint change the way things appear? How does the angle and height affect what your eye is first drawn to?
- What effects did lighting play in your photos? Examine all of the pictures you took in this activity. Which direction of lighting did you use most in your Hedgehog, Human, Hawk activity? Why do you think this is?
- The composition basics that were introduced in this builder are present in virtually all photos, regardless of whether or not the photographer chose to manipulate them. Can you think of other art or media forms which may have rules of composition?

### What's next?

Now that you're well on your way into photography, it's time to find out how you can make your best pictures even better! There are lots of things you can do with photos once you have them, and this last activity will help you discover your options.

# Skill Builder 6: Polishing and Preserving Pictures



## Skills Checklist

- Safely store digital photos
- Use photo-enhancing software
- Create a digital scrapbook

## Background information for leaders

This builder will help members discover some of the many things that they can do with their digital photographs. The three topics covered in this builder are storing and saving, enhancing digital photos and digital scrapbooking. Even within the realms of these three topics, the programs and applications available today offer endless opportunities within these categories. While this builder will only touch upon each, the leader may opt to spread this builder over multiple project meetings so as to further explore the topics covered in the Leader Guide.

## Important Words

Help members identify the following words using the methods discussed on page 5 of this manual.

Post-processing	Any alterations made to photographs after they have been captured is referred to as “post-processing.”
Resolution	The number of dots in a stored image, usually expressed in “DPI” (dots per inch). A higher number indicates greater detail captured or reproduced.
Mood/ Feeling	The emotion or atmosphere that an image invokes in an audience. Many things influence this, including colour. Cool colours (blues, greens) are calming and relaxing, while warm colours (reds, oranges, yellows) are energetic and exciting.

## Thinking Ahead

What will you discuss with members? Gather observations and think of examples that will help support your discussion.

## Preparing for Success

Linking back to the Skills Checklist, help members identify how they will know they have been successful in learning from this builder. Discuss what success in these activities might look like, sound like, or feel like.

## Activating Strategies

To help members start thinking about post-processing and storing their photos, ask them what they know they can do (or have done) with their photos once they have taken them.

## Dream it!

### What Now?

Using the chart in the members manual, have members record their ideas and list advantages and disadvantages of the example they come up with (examples may include scrap booking, uploading to websites, printing in photo or poster size, digitally editing and emailing photos).

## Do it!

### DISCOVER

Storing and Sharing (Approx. 15 min.)

#### Age Considerations:

Member manual is appropriate for members age 10 and up. Supervise while members browse online, ensuring content is appropriate.

#### Safety Considerations:

Members must be reminded to be careful when sharing information online, including photographs.

#### Equipment/ Supplies:

Computer with internet access, computer with writable CD or DVD drive, blank CDs, or printer and photo quality paper.

#### Resources:

Most camera manuals carry instructions on uploading and storing photos, and may be of assistance if camera-specific issues arise.

#### Instructions:

Members will perform one or many of the following tasks, determined by the individual members or by the leaders, as your available equipment and supplies allow:

- Store photos on a CD
- Upload photos to a website
- E-mail photos
- Print photos

Please remind members that we take photos for many reasons including to be creative or to preserve a memory. Some of the photos they take may be immediately deleted - just not up to par. For those that are kept, regardless of how they are stored - electronically or printed and collected in a binder or album, it is important to clearly label them.

During this project the members will want to label photos to remind them what skill builder or assignment they came from. In their ongoing photography experiences, correct labeling will help to find them and remember who, what, where and when. The Exploring Technology manual has a section on managing storage files that the members may want to review.

#### Store your photos on a CD:

A writable CD or DVD drive and appropriate software are needed to burn files onto disc. One CD-R has the capacity to store 700MB of data. On average this stores 50-100 images per disc, depending on how large the files are. A DVD, however, has 4500 MB of available storage space. Keep the discs in a CD binder with soft sleeves, or mail them to friends and family.

#### E-mail your photos:

Send photos to friends and family all over the world with e-mail. This is a great and inexpensive way to share images instantly. Make sure the images are **RESIZED** to make them smaller before sending them, otherwise the e-mail attachment will be too large and take a long time to download. Images can be resized by converting them in a photo enhancing program or application.

### Upload your photos to a website:

There are several photo storage websites that can be accessed over the web for free. Photobucket, Flickr, and Mozy are a few great FREE online photo storage sites which allow one to upload, store, manage and share photos with others. Set privacy settings to “private” so that work can only be viewed by an approved audience. Search “free online photo storage” to find more sites.

### Printing photos:

With quality photo paper, most home computer printers can produce high quality photographs. Be aware that printing lots of photos could cost a small fortune in ink. Many department stores have self-serve kiosks that can print images quite inexpensively. There are also online photo printing services which allow uploading of images directly to their website. After selecting sizes and quantities needed, they will be printed and can be shipped right to the front door!

### Digital Touch-ups

#### **Age Considerations:**

This activity is appropriate for members age 11 and up.

#### **Safety Considerations:**

A duplicate file of all photos to be edited should be created before editing begins, providing a backup original copy in case the image needs to be restored or edited differently at a later date.












#### **Equipment/ Supplies:**

Computer with photo-enhancing software, such as PhotoShop, PaintShopPro, Painter, Gimp or Picasa. The latter two are available online as free downloads.

#### **Resources:**

Most programs and applications come with a user’s manual. Many also have extensive help menus in the software itself. For further assistance, search “(program name) tutorial” and view the results.

#### **Instructions:**

Marquee		Move
Lasso		Magic Wand
Crop		Slice
Heal/Patch		Brush
Clone Stamp		History Brush
Erase		Gradient tool
Blur		Dodge/Burn
Path Selection		Text Tool
Pen Tool		Shape Tool
Notes		Eye Dropper
Hand Tool		Zoom

Members will edit a few of their photographs using photo-enhancing software. It is suggested that three photos be enhanced, however this number is at the discretion of the leader. Following are some basic descriptions of tools common to most types of photo-enhancing software. Members are to use at least three of the bolded terms (which are presented in their manuals) during the course of this activity.

- **Blur:** The Blur tool, which is displayed as a drop, is great when wanting to take the eye away from certain areas of a photo, or to enhance the depth of field.
- **Burn:** Burning adds darkness to images, which is perfect when trying to draw the attention of a viewer to a certain element in a photo.





## DISCOVER

- **Clone:** Displayed as a stamp, the clone tool is a fantastic way to rid images of unwanted elements by cloning and copying from a different area of the image.
- **Crop:** Displayed as either a “cross hair” or a crop, is best used to enhance composition or to crop out distracting elements from photos.
- **Dodge:** Dodge is best used when working on portraits. The dodge tool takes darkness out of images. This is perfect to use on areas that are darker than desired (in and around the eyes, dark circles, wrinkles, etc). Be aware that overusing this tool can remove the colour from images.
- **Erase:** Obviously, does as stated.
- **Eye Dropper:** The eye dropper allows one to sample colour from anywhere on the document. This is fantastic when trying to match colours from photos or documents.
- **Layers & Masking:** For advanced photo enhancing, become familiar with layers and masking. These two tools enhance the ability to manipulate images in many ways.
- **Move:** Usually displayed as an arrow, with this tool selected, you are able to move elements that you are working on within your document.
- **Paint:** Allows you to paint colours into your image.
- **Patch:** Used when a more seamless look is required when copying from one area to another. Great for wrinkles & blemishes.
- **Shape/Brushes:** The shape tool has a submenu or options palette where you can select from a number of the shapes and add them to your image.
- **Text:** The text tool allows you to add text to your images, create slogans, add names, dates, whatever you like!

Note: The Member Manual contains two copies of one photo. The first copy is the original, and the second image has been “burned,” adding darkness to the edges of the photo. Ask members to identify which tool was used in this instance.

## Scrapping it Together

### **Age Considerations:**

This activity is appropriate for members age 11 and up. Supervise while members browse online, ensuring content is appropriate.

### **Equipment/ Supplies:**

Stored digital photos, digital scrapbooking applications. Online services include Shutterfly, Smilebooks, Scrapblog and Smilebox. Basic software includes Picaboo, Scrapbook Max and Scrapbookflair. For advanced leaders, photo editing software may be used. Examples include Adobe Photoshop Elements 7, Corel Paint Shop Pro, and ACDSee. Search for these titles to find free trials or full downloads, some of which are also free (Scrapbookflair is recommended).

### **Resources:**

Purchased software may come with an owner’s manual, while all programs may contain useful help menus. Search “(program name) tutorial” for additional information.



## Instructions:

Members will create a short 2-3 page scrapbook of some of their photos. These may be photos taken during the course of this project or photos from home. The capabilities of the aforementioned programs vary widely. Use this as an opportunity to explore and become familiar with the program that you choose to use for this activity.



DISCOVER

In addition to points detailed in the member manual, encourage members to be aware of:

**Theme:** This will tie their scrapbook together coherently. Friends, family, adventure, animals, wilderness and technology are simple suggestions.

**Colour:** Choose a colour that will reinforce a mood or feeling. “Cool colours (blues and greens) are calming and relaxing colours, while “warm” colours (reds, oranges and yellows) are energetic and exciting.

## Dig it!

- Members are asked in their manual to explain what they liked about their chosen method of storing or sharing photos, and one thing that they disliked. Members who used multiple methods should record what they liked about their favourite method, and what they liked least about it. Then members are asked to think of a way to get around what they disliked (e.g. use a different program, save a file differently, etc.).
- Next, members are asked to describe what they thought was the most useful or important tool that they encountered while enhancing their photos, and why they feel that way.
- As they look over their scrapbooks, members are to find something that they like about their finished product, and why they like that. Then, they are asked what they would add or do differently if they were to redo this scrapbook activity and why they would add to or change it.

## What's Next?

Members have now completed all builders within the Discovering Digital Photography project. and Prepare for the Showcase Challenge and complete the Portfolio Pages with members.

### Leader's Notes



# In the Member Manual

## Skill Builder 6: Polishing and Preserving Pictures

### DISCOVER

Marty says...

Now that you have lots of photos and the know-how to create many more, this builder will show you what to do with them. Which ones are your best photos? Can you make them better? How can you keep them safe for years to come? These are all questions that this builder will help you answer.



### SKILLS CHECKLIST

- Safely store digital photos
- Use photo-enhancing software
- Create a digital scrapbook



### Important words

Watch for these important words throughout this builder:  
**Post-processing, resolution, mood**



## Dream it!

### What Now?

Talk with other project members or family members to learn how people have been displaying and storing their photos. List ideas below, and brainstorm advantages and disadvantages for each idea.

How it's stored/displayed	Advantages	Disadvantages



## Do it!

There are many things you can do with digital photos. The three ideas covered in this builder are:

- Storing photos where they will be safe for years to come
- Enhancing photos using post-processing software
- Creating a digital scrapbook to better display your photos

## Storing and Sharing

With all the photos you can take, you will want to share them with others and store them safely and securely so that people can view them any time. Be sure to label your photos. Correct labeling will help you find them and remember who, what, where and when. Choose at least one activity from the list on the following page. Your leader can help you choose and guide you through it.

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### Store photos on a CD

Photos stored on a CD are not lost if your hard drive crashes, and are easily shared among friends and family.

### E-mail photos

Send your photos to friends and family all over the world with e-mail! When saving photos for emailing, resolution size should be no more than 72 dpi.

### Upload photos to a website

Online photo storage sites let you upload, store, manage and share photos with others. Set your privacy settings to "private" so your work is only viewed by people you approve.

### Print photos

If you use quality photo paper, most home computer printers can produce high quality photographs. Many department stores have self-serve kiosks that can print your images.

### Digital Touch-ups

Choose three of your photos which you would like to edit using post-processing software. While you are editing them, make sure that you use at least three of the following tools at some point:

- **Blur/ Sharpen:** The Blur tool removes detail from the selected area, drawing interest away from it. Sharpen has the opposite effect, and makes an area clearer and more eye-catching.
- **Burn/ Dodge:** The dodge tool takes darkness out of images. Burning adds dark to your images. Lightening shadows can enhance portraits, while darkening changes where the eye is drawn to.



- **Clone:** Displayed as a stamp, the clone tool is a fantastic way to rid your image of unwanted elements by cloning and copying from a different area of the image.
- **Crop:** Crop is best used to enhance your composition or to crop out distracting elements from your photos.
- **Eye Dropper:** The eye dropper allows you to sample colour from anywhere on your document. This is fantastic when trying to match colours from your photo or document.
- **Layers & Masking:** As you become more advanced with your editing, familiarize yourself with layers and masking. These tools enhance your ability to manipulate images in many ways.
- **Patch:** Used when a more seamless look is required when copying from one area to another. Great for wrinkles & blemishes.
- **Text:** The text tool allows you to add text to your images, such as names, dates, slogans, anything you'd like!

### Mouse Message!

Always keep a separate copy of any photos you edit! You may want to return to a picture at a later time to try out a new editing trick you've learned, but if you don't have the original version of the photo you may be out of luck!



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# In the Member Manual

## DISCOVER

### Scrappling it Together

Just like the cameras you've used in this manual, scrapbooks and photo albums have gone digital too! Using digital scrapbooking software, create a small 2-3 page scrapbook to display some of your best photos.

#### Digital Scrapbooking Tips

- Choose a theme for your scrapbook, and try to choose photos and scrapbook graphics that relate to your theme.
- Use a variety of page designs and layouts to keep your scrapbook interesting.
- Don't get so caught up in digital doo-dads that you bury your pictures beneath your graphics! Find a balance between pictures and graphics.
- Crop out unnecessary parts of your photos to enhance their composition and make the most of the space that you have.
- Change the colour scheme of your scrapbook to set the "mood" or "feeling."
- Use text to tell the who, what, when, where and why of your pictures.



#### Dig it!

- How did you store or share your photos? List one thing you liked about the method you chose and why you liked it, and one part of it that you didn't like. What could you do to get around the part that you didn't like?

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- While you were enhancing your photos, did you find any tools that you found to be more helpful than others? Describe the tool that you found the most useful, or the most important and why you feel that way.

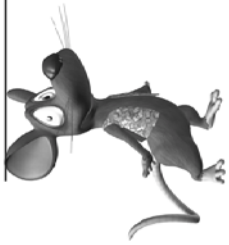
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- Looking over your scrapbook, what is your favourite part about how it turned out? What do you like about it? If you did this scrapbook over again, what would you add to it or do differently, and why is that?

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#### What's Next?

You have completed all of the Discovering Digital Photography builders! You should now understand how to use your camera, and how to take great pictures! Complete your Portfolio Pages with your leader. The Showcase Challenge is next!

## Showcase Challenge

Have members use their Member Manual to help them in organizing what they have learned to use in this activity. The form of the showcase can vary according to the wishes of the leaders and member's ability. Information could be presented in many forms, some of which are: posters, pamphlets, written reports, speeches, computer presentations, displays, etc. Suggestions are listed on the Showcase Challenge page at the back of the Member Manual. The best results are almost always obtained when members are allowed to present their information in the style of their choice.

### Showcase Challenge Bringing it all together!

Now that you have finished this project, it is time to think about how you will share your experiences and knowledge with others. You may put your new skills to work by helping at a community event or at your club Achievement or teaching others about your topic. The goal of the Showcase Challenge is to help highlight your new skills and help you understand how you can use them. It can be an opportunity to receive feedback from others on your project. So go back through your manual and find some highlights of your learning (what you are proud of) and think about how you will "showcase" it.

#### Dream It!

Here are some Showcase Challenge Suggestions:

- Demonstrate something you made or learned about
- Make a pamphlet
- Give a speech
- Use your new skills to help with the Club Achievement plans
- Make a poster or display
- Make a computer presentation (e.g. PowerPoint)
- Write a report
- Or come up with your own idea. It is up to you and your leader!

#### My Showcase Challenge Plan



My showcase idea: \_\_\_\_\_

What materials and resources do I need? \_\_\_\_\_

Who do I need to help me? \_\_\_\_\_

When do I need to have things done by? \_\_\_\_\_

DISCOVER

DISCOVER

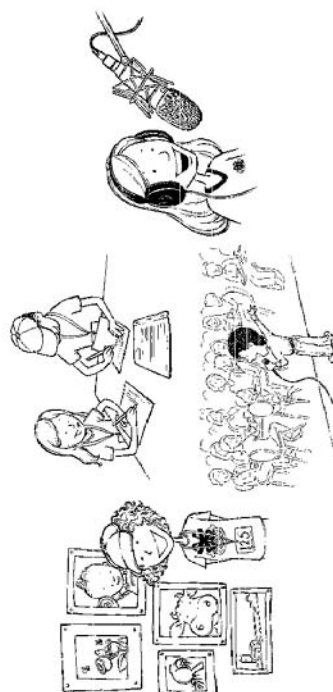
#### Do It!

Insert or attach your finished product or a photo of you sharing your skills in your Showcase Challenge.

#### Dig It!

Now that you have showcased your project skills;

- How did your Showcase Challenge go?
- What would you do differently next time?
- How will you use your new skills in the future? (in different situations?)





## Portfolio Page

Once members have completed all the builders they will have a lot of information recorded in their manuals. These are products of their learning. As a final project activity, members and leaders will pull together all this learning in completing the Portfolio Page in the Member Manual. There is a skills chart that lists the skills members are expected to complete by the end of the project. Members and leaders must indicate how they know the member was successful at a particular skill. Leaders will find evidence if they think about what they have observed members doing, what discussions they have had with members, and what members have produced. If leaders think that members need to go back and improve on any skill, this chart helps them clarify what needs to be done.

### In the Member Manual



## My 4-H Portfolio Page

Manitoba



Name: \_\_\_\_\_ Date: \_\_\_\_\_ Year in 4-H: \_\_\_\_\_

Club: \_\_\_\_\_ Hours Spent on 4-H: \_\_\_\_\_ (Project and Other 4-H Activities)

DISCOVER

### Discovering Teams Project Skills Chart

To be completed by the leader and the member based on observations and conversations throughout the project.

Skill Builder	Members will be able to... Each Builder had a Skills Checklist which identified the skill you will learn.	We know this because... Identify activities completed and record observations and information from discussions about activities.
1	<ul style="list-style-type: none"> <li>Recognize hazardous situations</li> <li>Use professional courtesies</li> <li>Properly prepare for outings</li> </ul>	
2	<ul style="list-style-type: none"> <li>Recognize a point-and-shoot camera from a DSLR camera</li> <li>Name and understand the function of basic camera parts</li> <li>Use basic camera features</li> </ul>	
3	<ul style="list-style-type: none"> <li>Understand how cameras record images</li> <li>Identify lighting situations</li> <li>Use exposure settings</li> </ul>	
4	<ul style="list-style-type: none"> <li>Safely handle a camera in many environments</li> <li>Clean and maintain camera</li> <li>Identify suitable batteries and memory cards</li> </ul>	
5	<ul style="list-style-type: none"> <li>Make use of "the rule of thirds"</li> <li>Use different lighting effects</li> <li>Use different perspectives</li> </ul>	
6	<ul style="list-style-type: none"> <li>Safely store digital photos</li> <li>Use photo-enhancing software</li> <li>Create a digital scrapbook</li> </ul>	
Showcase Challenge	<ul style="list-style-type: none"> <li>Explain Success in using the skills listed above</li> </ul>	

Additional Comments/Activities:

### Leader Point of Praise!

I am most impressed by...

I acknowledge that the member has completed the 4-H project requirements.

Leader's Signature: \_\_\_\_\_



## In the Member Manual

### Above and Beyond!

In addition to project skills, 4-H also increases skills in meeting management, communications, leadership, community involvement through participation in club, area, or provincial 4-H events or activities. List below any activities you participated in this year in 4-H.

(Some examples include Executive Positions Held, Workshops, Communication, Community Service, Rally, Bonspiels, Conferences, Judging, Camps, Trips, Awards, Representation to Area or Provincial Councils, etc)

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

**\*\*Feel Free to add additional pages that include awards, certificates, new clippings, photos or other items that describe your 4-H involvement.**

### Member Point of Pride!

What I learned...

What I need to improve on...

What I want others to notice...

Member's Signature: \_\_\_\_\_



### Point of Praise! Another's perspective on your achievements in 4-H.

(community professionals, MAFRI staff, 4-H club head leaders, 4-H Ambassadors, friends of 4-H)

I am most impressed by...

I believe that you have learned...

In the future I encourage you to...

Signature: \_\_\_\_\_







## 4-H Achievement

4-H Achievement is... a 4-H club celebration when members have completed their projects. Achievements are planned by the club to give recognition to members and leaders for their accomplishments in their 4-H projects and club activities.



A 4-H Achievement can take many different formats: from choosing a theme, to member project displays, to members using their new skills for the event (entertainment, food, decorating, photographer, etc.), to members presenting their project to the whole group, the options are endless and open to the creativity of the members and leaders in each club!

Clubs may also plan their Achievement to promote 4-H to the community or to recognize sponsors and others who have helped the club.

Members and leaders - be sure to check your project books for the project completion requirements, so you will be ready for your club's Achievement celebration!

**If you have any questions, comments or suggestions  
for this or other 4-H projects contact:**

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This manual is for educational use only and is not intended as professional advice.



**For more information about 4-H and the many  
4-H opportunities available please visit**

**<http://www.gov.mb.ca/agriculture/4-h/>**



## DISCOVER

### What is 4-H?

4-H is an international youth organization involving more than 7 million members in 80 countries around the world.

In Canada, 4-H began in 1913 in Roland, Manitoba as a community-based organization dedicated to growth and development of rural youth. Today's 4-H program reaches both farm and non-farm youth across Canada. The motto of "Learn to Do by Doing" is embodied in the program, as 4-H focuses on skill development as well as personal development of life skills such as communications, leadership and citizenship.



### 4-H Motto

"Learn To Do by Doing"

### 4-H Pledge

I pledge,  
My HEAD to clearer thinking,  
My HEART to greater loyalty,  
My HANDS to greater service,  
My HEALTH to better living,  
For my club, my community, and my country.

### 4-H Quality Equation Principles

#### Quality People

- Promote responsibility, respect, trust, honesty, fairness, sportsmanship, citizenship, teamwork and caring.

#### Quality Experiences

- Provide members with personal development and skill development experiences.

#### Quality Projects

- Promote and value quality effort.
- Promote high quality, safe food production within industry standards.



Manitoba 4-H project material is developed by  
Manitoba Agriculture, Food and Rural Initiatives (MAFRI)